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Notice to Readers: Recommended Adult Immunization Schedule --- United States, 2003--2004

In June 2003, the Advisory Committee on Immunization Practices (ACIP) approved the revised Adult Immunization Schedule for 2003--2004. The format has been revised to better represent the schedule's two components, by age group and by medical condition (Figures [1](#) and [2](#)) and better indicate how the footnotes apply to both figures.

Revisions to the schedule and footnotes include 1) additional information regarding use of tetanus-diphtheria toxoids as prophylaxis in wound management; 2) clarification regarding the number of doses of the measles component of the measles-mumps-rubella vaccine; 3) guidance regarding the use of intranasally administered, live, attenuated influenza vaccine for healthy persons aged 5--49 years; 4) recommendations regarding administering influenza vaccination to pregnant women with or without pre-existing chronic diseases or conditions; and 5) added information regarding influenza and consideration of *Haemophilus influenzae* type b vaccine for asplenic persons.

Two measures initiated by the Centers for Medicare and Medicaid Services (CMS) are expected to increase vaccination among Medicare and Medicaid beneficiaries. First, in 2002, CMS enacted a new regulation allowing for the use of standing orders at Medicare- and Medicaid-participating hospitals, long-term-care facilities, and home-health agencies to deliver influenza and pneumococcal vaccinations ([1](#)) as recommended by ACIP ([2](#)) and the Task Force on Community Preventive Services ([3](#)). Second, CMS increased reimbursement rates for administering hepatitis, influenza, and pneumococcal vaccines from a national average of \$3.98 in 2002 to \$7.72 in 2003 ([4](#)). In addition, expansion of the National Committee for Quality Assurance's Health Plan Employer Data and Information Set to include quality indicators on influenza vaccinations for persons aged 50--64 years in 2001 and pneumococcal vaccinations for persons aged ≥ 65 years in 2002 might improve vaccination-delivery services at managed-care organizations ([5,6](#)).

Health-care providers are reminded they should administer influenza vaccinations to all persons aged ≥ 50 years, regardless of preexisting medical conditions ([7](#)). Family physicians, internists, obstetrician/gynecologists, and other providers in private practice are urged to use the Adult Immunization Schedule in conjunction with the Standards for Adult Immunization Practices ([8](#)). Evidence indicates that chart reminders, patient reminders/recalls, and standing orders will reduce missed opportunities to vaccinate ([9,10](#)).

General information regarding adult immunization and vaccinating immunosuppressed persons can be obtained from state and local health departments and from CDC's National Immunization Program at <http://www.cdc.gov/nip>. The 2003--2004 Adult Immunization Schedule is available at <http://www.cdc.gov/nip/recs/adult-schedule.htm>. Vaccine information statements are available at <http://www.cdc.gov/nip/publications/vis>. ACIP statements for each recommended vaccine are available at <http://www.cdc.gov/nip/publications/acip-list.htm>. In addition, instructions for reporting adverse events after vaccination to the Vaccine Adverse Event Reporting System are available at <http://www.vaers.org> or by telephone, 800-822-7967.

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Figure 1

FIGURE 1. Recommended adult immunization schedule, by age group — United States, 2003–2004¹

Vaccine ^{2,3}	Age group (yrs)		
	19–49	50–64	≥65
Tetanus, diphtheria (Td) ⁴	1 dose booster every 10 years*		
Influenza	1 dose annually [†]	1 dose annually [†]	
Pneumococcal (polysaccharide)	1 dose ^{§†}		1 dose ^{§†}
Hepatitis B ⁴	3 doses (0, 1–2, 4–6 months)**		
Hepatitis A	2 doses (0, 6–12 months) ^{††}		
Measles, mumps, rubella (MMR) ⁴	1 dose if MMR vaccination history is unreliable; 2 doses for persons with occupational or other indications ^{‡ §}		
Varicella ⁴	2 doses (0, 4–8 weeks) for persons who are susceptible ^{††}		
Meningococcal (polysaccharide)	1 dose***		

For all persons in this age group
 For persons with medical/exposure indications
 Catch-up on childhood vaccinations

¹ Approved by the Advisory Committee on Immunization Practices and accepted by the American College of Obstetricians and Gynecologists (ACOG) and the American Academy of Family Physicians (AAFP).

² This schedule indicates recommended age groups for routine administration of currently licensed vaccines for persons aged ≥19 years. Licensed combination vaccines may be used whenever any components of the combination are indicated and the vaccine's other components are not contraindicated. Health-care providers should consult manufacturers' package inserts for detailed recommendations.

³ Additional information regarding these vaccines and contraindications for vaccination is available from the National Immunization Hotline (telephone, 800-232-2522 [English] or 800-232-0233 [Spanish]) or at <http://www.cdc.gov/nip>.

⁴ Covered by the Vaccine Injury Compensation Program. Information on how to file a claim is available at <http://www.hrsa.gov/osp/vicp> or by telephone, 800-338-2382. Vaccine injury claims are filed with U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington, D.C. 20005; telephone, 202-219-9657.

* Tetanus and diphtheria (Td). Adults, including pregnant women with uncertain histories of a complete primary vaccination series, should receive a primary series of Td. A primary series for adults is 3 doses: the first 2 doses administered at least 4 weeks apart and the third dose, 6–12 months after the second. Administer 1 dose if the person received the primary series and the last vaccination was ≥10 years previously. In addition, information is available regarding administration of Td as prophylaxis in wound management (1). The American College of Physicians Task Force on Adult Immunization supports a second option for Td use in adults: a single Td booster at age 50 years for persons who have completed the full pediatric series, including the teenage/young adult booster.

[†] Influenza vaccination. *Medical indications:* chronic disorders of the cardiovascular or pulmonary systems including asthma; chronic metabolic diseases including diabetes mellitus, renal dysfunction, hemoglobinopathies, or immunosuppression (including immunosuppression

caused by medications or by human immunodeficiency virus [HIV]) requiring medical follow-up or hospitalization during the preceding year; women who will be in the second or third trimester of pregnancy during the influenza season. *Occupational indications:* health-care workers (HCWs). *Other indications:* residents of nursing homes and other long-term-care facilities; persons likely to transmit influenza to persons at high risk (e.g., in-home caregivers to persons with medical indications; household contacts and out-of-home caregivers for children aged ≤23 months, or children with asthma or other indicator conditions for influenza vaccination; household members and caregivers for elderly and adults with high-risk conditions); and anyone who wishes to be vaccinated. For healthy persons aged 5–49 years without high-risk conditions, either the inactivated vaccine or the intranasally administered influenza vaccine (FluMist™) may be administered (2,3).

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Figure 2

FIGURE 2. Recommended adult immunization schedule, by medical condition — United States, 2003--2004

Medical condition	Vaccine						
	Tetanus-diphtheria (Td)*	Influenza†	Pneumococcal (polysaccharide)‡¶	Hepatitis B**	Hepatitis A††	Measles, mumps, rubella (MMR)‡‡	Varicella¶¶
Pregnancy		A					
Diabetes, heart disease, chronic pulmonary disease, and chronic liver disease, including chronic alcoholism		B	C		D		
Congenital immunodeficiency, leukemia, lymphoma, generalized malignancy, therapy with alkylating agents, antimetabolites, radiation, or large amounts of corticosteroids			E				F
Renal failure/end-stage renal disease and patients receiving hemodialysis or clotting factor concentrates			E	G			
Asplenia, including elective splenectomy and terminal complement-component deficiencies		H	E,I,J				
Human immunodeficiency virus (HIV) infection			E,K			L	

For all persons in this group
 For persons with medical/exposure indications
 Catch-up on childhood vaccinations
 Contraindicated

- A. For women without chronic diseases/conditions, vaccinate if pregnancy will be at second or third trimester during influenza season. For women with chronic diseases/conditions, vaccinate at any time during the pregnancy.
- B. Although chronic liver disease and alcoholism are not indicator conditions for influenza vaccination, administer 1 dose annually if the patient is aged >50 years, has other indications for influenza vaccine, or requests vaccination.
- C. Asthma is an indicator condition for influenza but not for pneumococcal vaccination.
- D. For all persons with chronic liver disease.
- E. For persons aged <65 years, revaccinate once after ≥5 years have elapsed since initial vaccination.
- F. Persons with impaired humoral but not cellular immunity may be vaccinated (9).
- G. For hemodialysis patients use special formulation of vaccine (40 µg/mL) or two 1.0 mL 20 µg doses administered at one site. Vaccinate early in the course of renal disease. Assess antibody titers to hepatitis B surface antigen (anti-HBs) levels annually. Administer additional doses if anti-HBs levels decline to ≤10 mIU/mL.
- H. No data have been reported specifically on risk for severe or complicated influenza infections among persons with asplenia. However, influenza is a risk factor for secondary bacterial infections that might cause severe disease in asplenic.
- I. Administer meningococcal vaccine and consider *Haemophilus influenzae* type b vaccine.
- J. In the event of elective splenectomy, vaccinate >2 weeks before surgery.
- K. Vaccinate as close to diagnosis as possible when CD4 cell counts are highest.
- L. Withhold MMR or other measles-containing vaccines from HIV-infected persons with evidence of severe immunosuppression.

§ Pneumococcal polysaccharide vaccination. *Medical indications:* chronic disorders of the pulmonary system, excluding asthma, cardiovascular diseases, diabetes mellitus, chronic liver diseases (including liver disease as a result of alcohol abuse [e.g., cirrhosis]), chronic renal failure or nephrotic syndrome, functional or anatomic asplenia (e.g., sickle cell disease or splenectomy), immunosuppressive conditions (e.g.,

congenital immunodeficiency, HIV infection, leukemia, lymphoma, multiple myeloma, Hodgkins disease, generalized malignancy, and organ or bone marrow transplantation), chemotherapy with alkylating agents, antimetabolites, or long-term systemic corticosteroids. *Geographic/other indications:* Alaska Natives and certain American Indian populations. *Other indications:* residents of nursing homes and other long-term-care facilities (4).

- ^{††} Revaccination with pneumococcal polysaccharide vaccine. One-time revaccination after 5 years for persons with chronic renal failure or nephrotic syndrome, functional or anatomic asplenia (e.g., sickle cell disease or splenectomy), immunosuppressive conditions (e.g., congenital immunodeficiency, HIV infection, leukemia, lymphoma, multiple myeloma, Hodgkins disease, generalized malignancy, and organ or bone marrow transplantation), chemotherapy with alkylating agents, antimetabolites, or long-term systemic corticosteroids. For persons aged ≥ 65 years, one-time revaccination if they were vaccinated ≥ 5 years previously and were aged < 65 years at the time of primary vaccination (4).
- ^{**} Hepatitis B (HepB) vaccine. *Medical indications:* hemodialysis patients, patients who receive clotting-factor concentrates. *Occupational indications:* HCWs and public-safety workers who have exposure to blood in the workplace, persons in training in schools of medicine, dentistry, nursing, laboratory technology, and other allied health professions. *Behavioral indications:* injection-drug users, persons with more than one sex partner during the previous 6 months, persons with a recently acquired sexually transmitted disease (STD), all clients in STD clinics, men who have sex with men (MSM). *Other indications:* household contacts and sex partners of persons with chronic Hepatitis B virus (HBV) infection, clients and staff of institutions for the developmentally disabled, international travelers to countries with high or intermediate prevalence of chronic HBV infection for > 6 months, and inmates of correctional facilities (5).
- ^{††} Hepatitis A (HepA) vaccine. For the combined HepA-HepB vaccine, use 3 doses (at 0, 1, and 6 months). *Medical indications:* persons with clotting-factor disorders or chronic liver disease. *Behavioral indications:* MSM, users of injecting and noninjecting illegal drugs. *Occupational indications:* persons working with Hepatitis A virus (HAV)-infected primates or with HAV in a research laboratory setting. *Other indications:* persons traveling to or working in countries that have high or intermediate endemicity of HAV (6).
- ^{§§} Measles, Mumps, Rubella (MMR) vaccination. *Measles component:* adults born before 1957 might be considered immune to measles. Adults born in or after 1957 should receive at least 1 dose of MMR unless they have a medical contraindication, documentation of at least 1 dose, or other acceptable evidence of immunity. A second dose of MMR is recommended for adults who 1) were exposed recently to measles or were in an outbreak setting, 2) were previously vaccinated with killed measles vaccine, 3) were vaccinated with an unknown vaccine during 1963–1967, 4) are students in postsecondary educational institutions, 5) work in health-care facilities, or 6) plan to travel internationally. *Mumps component:* 1 dose of MMR should be adequate for protection. *Rubella component:* Administer 1 dose of MMR to women whose rubella vaccination history is unreliable and counsel women to avoid becoming pregnant for 4 weeks after vaccination. For women of childbearing age, regardless of birth year, routinely determine rubella immunity and counsel women regarding congenital rubella syndrome. Do not vaccinate pregnant women or those planning to become pregnant in the next 4 weeks. If pregnant and susceptible, vaccinate as early in the postpartum period as possible (7).
- ^{¶¶} Varicella vaccination. Recommended for all persons who do not have reliable clinical history of varicella infection, or serologic evidence of varicella zoster virus (VZV) infection who might be at high risk for exposure or transmission. This includes HCWs and family contacts of immunocompromised persons, those who live or work in environments where transmission is likely (e.g., teachers of young children, day-care employees, and residents and staff members in institutional settings), persons who live or work in environments where VZV transmission can occur (e.g., college students, inmates and staff members of correctional institutions, and military personnel), adolescents and adults living in households with children, women who are not pregnant but who might become pregnant in the future, and international travelers who are not immune to infection. Do not vaccinate pregnant women or those planning to become pregnant in the next 4 weeks. If a woman is pregnant and susceptible, vaccinate as early in the postpartum period as possible. Approximately 95% of U.S.-born adults are immune to VZV (8,9).
- ^{**} Meningococcal vaccine (quadrivalent polysaccharide for serogroups A, C, Y, and W-135). Consider vaccination for persons with medical indications: adults with terminal complement component deficiencies or with anatomic or functional asplenia. Other indications: travelers to countries where meningitis is hyperendemic or epidemic

(e.g., the "meningitis belt" of sub-Saharan Africa, Mecca, or Saudi Arabia). Revaccination at 3–5 years may be indicated for persons at high risk for infection (e.g., persons residing in areas in which disease is epidemic). Counsel college freshmen, particularly those who live in dormitories, regarding meningococcal disease and the vaccine so that they can make an educated decision about receiving the vaccination (10). The American Academy of Family Physicians recommends that colleges provide education on meningococcal infection and vaccination and offer it to those who are interested. Physicians need not initiate discussion of the meningococcal quadrivalent polysaccharide vaccine as part of routine medical care.

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